

Biological Analysis Report

SE-DIST-2018-11-14-01

Florida Department of Environmental Protection
Central Laboratory
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Tallahassee, FL 32399-2400
DOH Accreditation E31780

Overflow Analyses Performed By:
Pace Analytical Services
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DOH Accreditation E86240

Event Description: **SMP- Broward**
Request ID: **RQ-2018-11-12-13**
Customer: **SE-DIST**
Project ID: **SMP**

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Date Certified: 07-DEC-2018 15:24



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Chlorophyll/Grain Size/BOD, Molecular and Overflow.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: NORTH NEW RIVER CANAL (NNR-3)

Collection Date/Time: 11/13/2018 11:30

Field ID: G4SENNR3

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2041056	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.7	I	ug/L	P355427	
		Phaeophytin-a	0.60	U	ug/L	P355427	
		Chlorophyll-a, Uncorrected	1.8		ug/L	P355427	

Ref. Method and Comment:

SM 10200 H (mod.): Precision data is not available for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for available precision data.

Sample Location: DANIA CUTOFF @ OLD GRIFFIN

Collection Date/Time: 11/13/2018 12:40

Field ID: G4SE0106

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2041055	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.0		ug/L	P355427	
		Phaeophytin-a	0.60	U	ug/L	P355427	
		Chlorophyll-a, Uncorrected	2.0		ug/L	P355427	
2041069	Enterolert/QT	Enterococci-Quanti-Tray	393		MPN/100 mL		

Ref. Method and Comment:

SM 10200 H (mod.): Precision data is not available for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for available precision data.

Sample Location: DANIA CUTOFF @ US 1

Collection Date/Time: 11/13/2018 13:00

Field ID: G4SE0028

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2041057	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.3	I	ug/L	P355427	
		Phaeophytin-a	0.60	U	ug/L	P355427	
		Chlorophyll-a, Uncorrected	1.4		ug/L	P355427	
2041071	Enterolert/QT	Enterococci-Quanti-Tray	145		MPN/100 mL		

Ref. Method and Comment:

SM 10200 H (mod.): Precision data is not available for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for available precision data.

Sample Location: POMPANO @ DIXIE

Collection Date/Time: 11/13/2018 13:40

Field ID: G4SE0041

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2041068	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P355487	
	SOP-PCR-1.4	BacR-qPCR**	5.1E+03	I	TSC/100 mL	P355487	LCS, MS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				
2041070	Enterolert/QT	Enterococci-Quanti-Tray	187		MPN/100 mL		

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P355427

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.55	U	ug/L
Chlorophyll-a, Uncorrected	0.40	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P355427

Component	Result	Code	Units
Phaeophytin-a	0.60	U	ug/L

Reference Method: SOP-PCR-1.0
Batch ID: P355487

Component	Result	Code	Units
HF183-qPCR	280	U	GEU/100 mL

Reference Method: SOP-PCR-1.4
Batch ID: P355487

Component	Result	Code	Units
BacR-qPCR	3.0E+03	U	TSC/100 mL

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P355427

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	96.6		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P355487

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	121	135	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P355487

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	82.5	182	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P355487

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2038761	HF183-qPCR	89.4		P	50 - 175
2038762	HF183-qPCR	104	107	P/P	50 - 175
2040322	HF183-qPCR	102		P	50 - 175
2040324	HF183-qPCR	93.8		P	50 - 175
2040451	HF183-qPCR	106		P	50 - 175
2041068	HF183-qPCR	99.9		P	50 - 175
2041138	HF183-qPCR	120		P	50 - 175
2041703	HF183-qPCR	113		P	50 - 175
2041704	HF183-qPCR	108		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0

Batch ID: P355487

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2041706	HF183-qPCR	105		P	50 - 175
2042736	HF183-qPCR	105		P	50 - 175
2043410	HF183-qPCR	95.0		P	50 - 175
2043414	HF183-qPCR	105		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P355487

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2038762	BacR-qPCR	66.0	66.4	P/P	50 - 175
2040324	BacR-qPCR	52.8		P	50 - 175
2040451	BacR-qPCR	54.0		P	50 - 175
2041068	BacR-qPCR	52.1		P	50 - 175
2041703	BacR-qPCR	60.5		P	50 - 175
2041706	BacR-qPCR	52.9		P	50 - 175
2042736	BacR-qPCR	56.1		P	50 - 175
2043410	BacR-qPCR	48.7		F	50 - 175
2043414	BacR-qPCR	54.3		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)

Batch ID: P355427

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2041134	Chlorophyll-a, Corrected	16.5	Sample	P	0 - 25
2041134	Chlorophyll-a, Uncorrected	16.7	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0

Batch ID: P355487

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038762	HF183-qPCR	2.28	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4

Batch ID: P355487

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038762	BacR-qPCR	0.687	Spike	P	0 - 25

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Quality Assurance Report Surrogates

Lab Sample ID: 2041068
 Field Sample ID: G4SE0041

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	85.5	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	102	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	96.6						16.5	
	Chlorophyll-a, Uncorrected							16.7	
SOP-PCR-1.0	HF183-qPCR	135	121	89.4	104	107			2.28
				102					
SOP-PCR-1.4	BacR-qPCR	182	82.5	66.0	66.4	52.8			0.687
				54.0					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
Enterolert/QT / E86240	Enterococci by Enterolert Quanti-Tray method by Pace Analytical Services in Pompano Beach	2041069, 2041070, 2041071
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2041055, 2041056, 2041057
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2041068
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2041068
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	2041068

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	11/13/2018	11/13/2018 15:22		11/14/2018 19:20	Pace Analytical Pompano	2041069, 2041070, 2041071
SM 10200 H (mod.)	11/14/2018	11/14/2018 15:50	Edwin Gonzalez-Soto	11/29/2018 11:30	Peterson Janvier	2041055, 2041056, 2041057
SOP-PCR-1.0	11/14/2018	11/14/2018 14:05	Sarah Menz	12/06/2018 09:05	Mailin Lopez	2041068
SOP-PCR-1.4	11/14/2018	11/14/2018 14:05	Sarah Menz	12/06/2018 14:02	Mailin Lopez	2041068
SOP-PCR-4.0	11/14/2018	11/14/2018 14:05	Angela Smith	12/03/2018 15:06	Sarah Menz	2041068